

BI
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[illegible]

<120> An Improved Peptide, Immunogenic Composition and Vaccine or Medical Preparation, a Method to Immunise Animals Against the Hormone LHRH, and Analogs of the LHRH Tandem Repeat Peptide and their Use as Vaccine

<140>

<150> US 09/274,048

<150> US 08/981,557

<150> PCT/NL96/00223

<150> US 08/447,298

<150> US 08/476,013

<160> 13

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Sub
c1

00659983-091200

<210> 1
<211> 10
<212> peptide
<213> Sus scrofa
<220>
<221> Xaa
<222> 1
<223> pyroglutamic acid
<221> Xaa
<222> 10
<223> Gly-NH₂
<400> 1
Xaa His Trp Ser Tyr Gly Leu Arg Pro Xaa
1 5 10

<210> 2
<211> 10
<212> peptide
<213> Homo sapiens
<220>
<221> Xaa
<222> 1
<223> pyroglutamic acid
<221> Xaa
<222> 10
<223> Gly-NH₂
<400> 2

Sub
c1

Xaa His Trp Ser His Gly Trp Tyr Pro Xaa
1 5 10

<210> 3

<211> variable

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid or Gln with attached tail of one or more additional amino acids

<221> Xaa

<222> 3

<223> Trp or N(indole)formyl-tryptophan

<221> Xaa

<222> 13

<223> Trp or N(indole)formyl-tryptophan

<221> Xaa

<222> 20

<223> Gly-NH₂ or Gly with attached tail of one or more amino acids

<221> X

<222> 11

<223> direct bond or a spacer group between Gly at position 10 and Gln at position 11

<221> n

<222> 20

002160"E865950

sub
c1

<223> integer greater than or equal to 1 indicating number of repeats of sequence at positions 10 to 19

<400> 3

Xaa	His	Xaa	Ser	Tyr	Gly	Leu	Arg	Pro	[Gly	X	Gln	His	Xaa	Ser	Tyr	Gly
1					5					10						15	
Leu	Arg	Pro	n	Xaa													
				20													

<210> 4

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 21

<223> Cys-NH₂

002260-3865960

Sub
c1

<221> Xaa

<400> 4

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15
Leu Arg Pro Gly Xaa
20

<210> 5

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 4

<223> amino acid substitution

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 14

<223> amino acid substitution

00659983.091200

sub.
e1

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 5

Xaa His Trp Xaa Tyr Xaa Leu Arg Pro Gly Xaa His Trp Xaa Tyr Xaa
1 5 10 15
Leu Arg Pro Gly Xaa
20

<210> 6

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 8

<223> amino acid substitution

<221> Xaa

<222> 11

002760-6865950

sub
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<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 18

<223> amino acid substitution

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 6

Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Xaa	Pro	Gly	Xaa	His	Trp	Ser	Tyr	Xaa
1				5					10					15	
Leu	Xaa	Pro	Gly	Xaa											
			20												

<210> 7

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

002160-EE65960

Sub
C1

002T50" E8665960

<221> Xaa

<222> 10

<223> amino acid substitution

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 20

<223> amino acid substitution

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 7

Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Arg	Pro	Xaa	Xaa	His	Trp	Ser	Tyr	Xaa
1				5					10					15	
Leu	Arg	Pro	Xaa	Xaa											
				20											

<210> 8

<211> 42

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> Glu-NH₂

<221> Xaa

<222> 6

sub
c1

002760" E8665960

<223> D-Lys

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 22

<223> Glu-NH₂

<221> Xaa

<222> 27

<223> D-Lys

<221> Xaa

<222> 32

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 37

<223> D-Lys

<221> misc-structure

<222> 21

<223> dimer formed between Cys at 21 to Cys at 42

<400> 8

Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Arg	Pro	Gly	Xaa	His	Trp	Ser	Tyr	Xaa
1			5						10					15	
Leu	Arg	Pro	Gly	Cys	Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Arg	Pro	Gly	Xaa
		20						25					30		
His	Trp	Ser	Tyr	Xaa	Leu	Arg	Pro	Gly	Cys						

Sub
C1

002T60" E0665960

<210> 9

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 9

Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Arg	Pro	Gly	Xaa	His	Trp	Ser	Tyr	Xaa
1				5					10					15	
Leu	Arg	Pro	Gly	Xaa											
			20												

sub
cl

002150" 0365960

<210> 10

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> amino acid substitution with acetyl group

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 11

<223> amino acid substitution

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 10

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ser Tyr Xaa

1

5

10

15

Leu Arg Pro Gly Xaa

20

<210> 11

<211> 21

Sub
cl

002150-68655960

- <212> peptide
 - <213> artificial
 - <220>
 - <221> Xaa
 - <222> 1
 - <223> pyroglutamic acid
 - <221> Xaa
 - <222> 5
 - <223> amino acid substitution
 - <221> Xaa
 - <222> 6
 - <223> D-Lys
 - <221> Xaa
 - <222> 11
 - <223> Gly or Gly preceded by spacer
 - <221> Xaa
 - <222> 15
 - <223> amino acid substitution
 - <221> Xaa
 - <222> 16
 - <223> D-Lys
 - <221> Xaa
 - <222> 21
 - <223> Cys-NH₂
 - <400> 11
- Xaa His Trp Ser Xaa Xaa Leu Arg Pro Gly Xaa His Trp Ser Xaa Xaa

sub
cl

1 5
Leu Arg Pro Gly Xaa
20

10

15

<210> 12

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 7

<223> amino acid substitution

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

<223> D-Lys

<221> Xaa

<222> 17

<223> amino acid substitution

<221> Xaa

002160-EE665960

002160-2226990

sub
61
<222> 21

<223> Cys-NH₂

<400> 12

Xaa His Trp Ser Tyr Xaa Xaa Arg Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15
Xaa Arg Pro Gly Xaa
20

<210> 13

<211> 21

<212> peptide

<213> artificial

<220>

<221> Xaa

<222> 1

<223> pyroglutamic acid

<221> Xaa

<222> 6

<223> D-Lys

<221> Xaa

<222> 9

<223> amino acid substitution

<221> Xaa

<222> 11

<223> Gly or Gly preceded by a spacer

<221> Xaa

<222> 16

BT
Don't
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e1

<223> D-Lys

<221> Xaa

<222> 19

<223> amino acid substitution

<221> Xaa

<222> 21

<223> Cys-NH₂

<400> 13

Xaa	His	Trp	Ser	Tyr	Xaa	Leu	Arg	Xaa	Gly	Xaa	His	Trp	Ser	Tyr	Xaa
1				5					10					15	
Leu	Arg	Xaa	Gly	Xaa											
			20												

002760" E865960